REMARKS

Claims 1, 3, 4, 6, and 13-21 are pending. Claim 21 has been added. Reconsideration of the application is respectfully requested.

§ 103 Rejections

Claims 1, 3, 4, 6 and 13-20 are rejected under 35 USC § 103(a) as being unpatentable over O'Brien et al. (U.S. Patent No. 6,915,178) in view of Duret et al. (U.S. Patent No. 4,663,720). The Applicants respectfully disagree, and submit that claims 1, 3, 4, 6, and 13-20, in addition to new claim 21, are patentable over the combination proposed by the Examiner.

Graham v. John Deere Co. describes the proper procedure for obviousness analysis: "Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined." 383 U.S. 1, 17-18 (1966). Further, "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970) (*see also* MPEP § 2143.03). In making an obviousness rejection, "[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness." (See MPEP § 2142). Further, "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

In rejecting independent claims 1 and 6, the Examiner relied on O'Brien for the majority of the limitations of claims 1 and 6, and primarily on Duret for limitations related to the control data and display of the control surface. However, the Applicants contend that the cited portions of O'Brien and Duret do not disclose each of the limitations of claims 1 and 6. As a result, the Examiner has not met his burden in presenting a *prima facie* case of obviousness.

For example, both claims 1 and 6 recite, "generating control data from said input data, said control data representing a control surface which meets the stability requirements," "generating design data from said input data and separately from the control data which

represent the three-dimensional shape of the prosthesis," and "displaying the shape of the prosthesis together with the control surface on a monitor." The control data and design data recited above are two sets of data both generated "from said input data," but generated "separately." The two sets of data represent "a control surface" and "the shape of the prosthesis," respectively. The "shape of the prosthesis" and "control surface" are displayed "*together*." The Examiner relies primarily on O'Brien for these limitations (referring to col. 4, lines 14-47, col. 2, lines 54-58. col. 2, lines 58-62, and generally, col. 2, line 44 to col. 3, line 11). The Examiner also relies on Duret to supplement his argument (see col. 7, line 64 to col. 8, line 36).

None of the portions of O'Brien or Duret cited by the Examiner disclose these limitations. Specifically, the Examiner suggests of Duret that "Through the use of a CAD system (fig. 7), a user can visualize the model making it possible to verify and make modification as necessary using modification unit prior to displaying the model on a monitor 110" (paragraph 3.1 of Office Action dated Mar. 3, 2010). However, neither O'Brien nor Duret discloses "displaying the shape of the prosthesis together with the control surface on a monitor" as recited by claims 1 and 6. O'Brien appears to only display a single 3D digital data file. Duret also does not teach or suggest these limitations.

Additionally, both of independent claims 1 and 6 recite, "providing stability requirements" and "wherein the stability requirements include a minimum required thickness." While the Examiner points to col. 4, lines 14 to col. 5, line 22 of O'Brien and col. 7, line 64 – col. 8, line 36 of Duret for these limitations, the Applicants respectfully respond that neither reference teaches or suggests these limitations. For instance, while O'Brien mentions a "minimum thickness of the prosthesis" (col. 4, lines 45-46), there is no indication that such a minimum thickness is tied to stability requirements, as recited by claims 1 and 6 of the present application ("wherein the stability requirements include a minimum *required* thickness of the prosthesis"). As described by the specification, the "minimum *required* thickness" ensures that the prosthesis walls are thick enough to be capable of withstanding the loads from milling work, when the prosthesis is being created, and chewing, after the prosthesis is mounted to the tooth stump (p. 2, line 17 – p. 3, line 3).

The Examiner argues that "the minimum thickness provided by O'Brien would clearly be understood to ensure stability of the prosthesis" (paragraph 3.1 of Office Action dated Mar. 3, 2010). However, in contrast to the Examiner's assertion, O'Brien suggests that the user can change the minimum thickness to any value without regard to stability requirements (col. 4, lines 44-47). Further, the cited portion of Duret mentions "thickness of the cement film which will hold the prosthesis" (col. 7, lines 2-3), but makes no disclosure related to a "minimum required thickness of the prosthesis." Thus, Applicants respectfully maintain that neither O'Brien nor Duret discloses the stability requirement or minimum required thickness as claimed by the present application.

Claims 1 and 6 also recite, "generating control data from said input data, said control data representing a control surface which meets the stability requirements" and "the displayed control surface provides *a visual representation of the minimum required thickness*." While the Examiner suggests that these limitations are disclosed by O'Brien and Duret, the Applicants again respectfully contend that these limitations are not disclosed. In contrast to the above quoted limitations, the Examiner refers to the "3D digital data file created by O'Brien" and the parameters listed in col. 2, lines 44-47. These parameters are only displayed in the context of "an image 14 of crown 50a to be attached to the stump 32." O'Brien mentions displaying the image of the prosthesis, but does not disclose a control surface in which "the *displayed control surface* provides a visual representation of the minimum required thickness." The displayed image of O'Brien can have any desired thickness as modified by the user (col. 2, lines 44-47) and does not teach or suggest the limitations of claims 1 and 6.

Further, Duret does not disclose these limitations. The portions of Duret cited by the Examiner (fig. 7 and col. 7, line 64 – col. 8, line 36) refer to "a model of the prosthesis" (col. 8, lines 11-12), and do not disclose a "*displayed control surface*" wherein the control surface "provides a visual representation of the minimum required thickness" as claimed in the present application. The Examiner suggests that "that material thickness described by Duret does ensure stability of the dental prosthesis implantation and would clearly be understood by one of ordinary skill in the art" (para. 3.1 of Office Action dated Mar. 3, 2010). However, the "material thickness" of Duret is not related to a dental prosthesis, but rather is the "thickness of the cement

film which will hold the prosthesis" (col. 8, lines 2-3). For at least the reasons above, the Applicants respectfully contend that claims 1 and 6 were nonobvious at the time of invention.

Further, claims 1 and 6 also both recite, "the design data are modified by a user based on a *visual comparison* of the displayed design data and the displayed control surface in order to meet the stability requirements." While the Examiner cites O'Brien for this limitation (Fig. 2-4, col. 4 lines 14-47 and col. 2, line 44 to col. 3, line 11), none of these portions of O'Brien teach or suggest a "visual comparison of the displayed design data and the displayed control surface." O'Brien discusses creating "three dimensional digital data substantially corresponding to the dental prosthesis to be manufactured," (col. 2, lines 48-52). While this "image is modified so that the modified image displayed on the monitor screen substantially corresponds to the dental prosthesis to be manufactured" (col. 2, lines 58-62), O'Brien's displayed image does not allow a user to modify design data based on a "visual comparison of the displayed design data and the displayed control surface in order to meet the stability requirements." Duret also does not teach or suggest this limitation.

Claims 3-4 and 13-18 each add additional features to claim 1. Claims 19-20 each add additional features to claim 6. Claims 3-4 and 13-18 are patentable for at least the reasons given above for their base claim 1. Claims 19-20 are also patentable for at least the reasons given above for their base claim 6.

The Applicants respectfully request that the rejection of claims 1, 3, 4, 6, and 13-20 under 35 USC § 103(a) as being unpatentable over O'Brien in view of Duret be withdrawn. Additionally, new claim 21 is patentable for at least the same reasons as claims 1 and 6, and Applicants likewise request that claim 21 be allowed.

Examination and reconsideration of the application as amended is requested.

Respectfully submitted,

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